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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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<p>(21) International Application Number: PCT/NZ93/00015</p> <p>(22) International Filing Date: 10 March 1993 (10.03.93)</p> <p>(30) Priority data: 241908 10 March 1992 (10.03.92) NZ</p> <p>(71)(72) Applicant and Inventor: VAN GISBERGEN-RUTHERFORD, Miriam, Petronella [NZ/NZ]; 6 Neralce Court, Takanini, Auckland 1702 (NZ).</p> <p>(74) Agents: BENNETT, Michael, R. et al.; 6th Floor, Huddart Parker Building, Post Office Square, P.O. Box 949, Wellington 6001 (NZ).</p>		<p>(81) Designated States: AT, AU, BB, BG, BR, CA, CH, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, LK, LU, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SK, UA, US, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, SN, TD, TG).</p> <p>Published With international search report.</p>
<p>(54) Title: INFANT SLEEP WRAP</p> <div data-bbox="561 1148 1130 1692"> </div> <p>(57) Abstract</p> <p>An infant sleep wrap for maintaining a desired position of an infant (8) in a bed or cot (10) comprises a base member (3) having attachment means (7) for attachment to the base member (3), a securing member (1) which is sufficiently long to encircle an infant's chest and/or abdomen and is sufficiently wide to at least extend substantially between the lateral chest and the lower abdomen of the infant, and fastening means (6) on the securing member (3) for fastening the securing member about the infant.</p>		

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"INFANT SLEEP WRAP"**BACKGROUND OF THE INVENTION****5 1. FIELD OF THE INVENTION**

This invention relates to an infant sleep wrap for maintaining a desired position, of an infant in a bed or cot for the comfort, security and health care of children and in particular for babies and infants.

The use of articles or means to safely secure and maintain a desired position, of children such as babies and infants in their beds or cots for sleeping while
10 unattended is desirable. In particular, a high quality of sleep is important to both the infant and the caregiver, since there are strong links between infant sleep deprivation and child abuse. Also, there is a strong link between infant sleep deprivation, or poor quality sleep and infant injury statistics. If the infant does not
15 sleep well, or if the infant moves substantially and is restless during sleep then there is a risk that the infant may fall from the bed or cot or otherwise injure itself. For example, infants have been known to suffocate from having their faces caught under bumper pads at the sides of cots, or even from lying face down in the prone position on various bedding. Falls are also very common among infants. For example, in
20 1989 in New Zealand almost 40% of hospital admissions arising from injuries from falls in the 0-2 year old range were accounted for by cot, bed or bunk falls.

2. DESCRIPTION OF THE PRIOR ART

Methods and articles presently used are improvised and untested, and as a
25 result not proven to be entirely effective or safe for the subject. This is clearly disadvantageous.

Wraps or other devices which people presently use are often in the form of an article which is worn by the infant and may comprise, for example, a jacket or an article having shoulder straps and a zip. These articles are unduly restrictive,
30 preventing any natural movement, especially natural sleep movement, of the infant.

Articles are also known which comprise a strip of material which attaches around the mattress or base of the bed or cot by ties or tapes and also attaches

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about a part of the trunk of the child. In these articles, the strip of material is usually very narrow as compared with the length of the trunk of the infant and this can cause a number of problems. The narrow strip could cause localised pressure and obstruction, particularly as a child could rotate and create a tighter knot in the strip while the child is being restrained. The narrowness of the strip is also dangerous as it could restrict circulation or even cause strangulation or cause arms and legs to become caught underneath the strip of material. Any of these physical problems could cause distress for a child and could result in a fatality.

It is therefore an object of the present invention to provide an infant SLEEP wrap which will obviate or minimise the foregoing disadvantages in a simple yet effective manner, or which will at least provide the public with a useful choice.

To those skilled in the art to which the invention relates, many changes in construction and widely differing embodiments and applications of the invention will suggest themselves without departing from the scope of the invention as defined in the appended claims. The disclosures and the descriptions herein are purely illustrative and are not intended to be in any sense limiting.

BRIEF SUMMARY OF THE INVENTION

An infant sleep wrap for maintaining a desired position of an infant in a bed or cot. The wrap comprises a base member having attachment means for attachment to a base or mattress of the bed or cot and a securing member attached to the base member. The securing member is sufficiently long to encircle an infant's chest and/or abdomen and is sufficiently wide to at least extend substantially between the lateral chest and the lower abdomen of the infant. The securing member also has fastening means for fastening the securing member about the infant.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention may be more fully understood by having reference to the accompanying drawings wherein a preferred embodiment of the invention is set forth.

Figures 1, 2 and 3 illustrate the invention.

Figure 1 is a plan view of an infant sleep wrap illustrating the securing member and base member before use;

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Figure 2 is a plan view of the infant sleep wrap of Figure 1 illustrating the preferred method of fastening the securing member;

Figure 3 is a perspective view of the preferred use of the sleep wrap of the preceding figures on a mattress, illustrating the fastened securing member around the trunk or torso of an infant lying on the base member substantially attached to said mattress; and

Figures 4 and 5 are perspective views of the securing member showing its attachment to the base member.

10 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to figure 1 the drawings, an infant sleep wrap and sleeping aid for maintaining a desired position, or range of positions of a child is shown. The wrap has a base member 3 with attachment means 7 to attach base member 3 to a base of a bed or cot or a mattress 9 (figure 3) for example, or the like in use. A securing member 1 is affixed to base member 3 by stitching 2 for example, and fastening means 6 are provided at one or both ends of the securing member 1 to enable securing member 1 to be secured at ends 5 to or about an infant or child 8.

Securing member 1 is of suitable dimension and the fastening means 6 are adjustable to be capable in use of firmly holding varying sizes of infant 8 when securing member 1 is secured to or about infant 8 and fastened together at ends 5 by the fastening means 6. In the preferred embodiment the fastening means 6 comprise engageable pads or strips of material such as that sold under the trade mark VELCRO. Thus one of the pads or strips connected to one of the ends 5 of the member 1 is constructed of a fibrous material and the other pad or strip at the other end of the member 1 has a plurality of flexible resilient hooks which engage with the fibrous material when the pads or strips are pressed together. A suitable force applied to pull the pads or strips directly away from one another separates them. The engageable pads are sufficiently large so that the fastening means are adjustable to allow the securing member to be fastened about the chests and/or abdomens of infants of different sizes. The adjustment also allows the firmness of the fit of the securing member about the infant's abdomen to be adjusted. Other fastening means, such as a safety pin could be used, but it has been found that

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VELCRO is a more desirable material for the important reason that infants who are older or more physiologically developed can undo the VELCRO fasteners themselves when they awake, if the need arises.

5 Securing member 1 when secured to or about the infant 8 and fastened by fastening means 6 will prevent the infant 8 manoeuvring itself out of fastened securing member 1.

 Base member 3 is attachable to mattress 9 or the like in such a manner that in use the bed wrap as illustrated in figure 3 resists attempts by infant 8 to roll or move in any direction to cause base member 3 to loosen or detach from mattress 9
10 or the like.

 Securing member 1 and base member 3 are made from a flexible, strong and washable material such as polycotton. The attachment means 7 also comprise VELCRO strips and pads and are provided at ends 16 of base member 3 and the base member is sufficiently long to wrap around the base or mattress 9 so that the
15 ends 16 can be affixed to each other. The attachment means 7 are sufficiently large to provide adjustment so that the base member 3 can be fastened about bed or cot bases or mattresses of varying sizes. The attachment means 7 could alternatively comprise tapes for example or material capable of being tied so as to tie ends 16 together about the base or mattress 9.

20 Base member 3 incorporates an area 13 within physical reach of infant 8 which may for example contain attached articles or means (not shown) for entertaining or occupying infant 8.

 In an alternative embodiment (not shown) of the invention base member 3 is of suitable dimension suitable to cover mattress 9 and to fit on and around corners
25 10 of mattress 9 or the like.

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Referring to figures 1, 2 and 3, the preferred method of use of the invention is described below. The bed or cot base or mattress 9 is removed or lifted and the base member 3 is placed around the mattress 9 and the VELCRO attachment means 7 are fastened to each other by pressing them together on the underside of the mattress so that the base 3 is securely attached to the mattress 9. An infant 8 is laid in desired orientation on securing member 1 preferably substantially over the stitching 2 which affixes the member 1 to base 3. The ends 5 of securing member 1 are then pulled about the abdomen of the infant 8 as shown by arrows 18 (figure 2) and fastened together by VELCRO fastening means 6 to hold infant 8 securely in the desired orientation as shown in figure 3.

As long as the caregiver who places the infant in the wrap does not draw the ends 5 of the securing member 1 about the infant's abdomen too tightly, the infant will be comfortably located without being unnecessarily restrained during sleep.

For infants in certain age groups there is a high risk of sudden infant death syndrome (SIDS) and it is desirable that these infants be maintained in a supine sleep position or a side position since these positions have been found to substantially reduce the chances of SIDS occurring. The present invention assists in positioning infants in a supine sleep position or a side position.

With older or more physiologically advanced infants, for example those approaching 2 years old, the present invention allows the infant to roll onto its side or into some other comfortable sleep position without allowing the infant to fall off the cot or bunk and so injure itself. The fastening means 6 which comprise VELCRO fasteners provide the advantage that older or more physiologically advanced infants can undo the fasteners if they wish when they awake to allow themselves greater freedom of movement if this is necessary.

The dimensions of the wrap are very important, since if the width of the securing member 1 is too narrow then localised pressure may be created across the thorax or abdomen of the infant which can result in discomfort for the infant and may lead to a potentially fatal situation in which the infant could possibly be strangled by a narrow securing member. It is also important that the securing member is not too wide so that the infant does not have restricted head, arm and leg movement. Therefore, it is important that the width of the securing member 1 is

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chosen so that with young or small infants, the width of securing member is sufficient to extend over that part of the trunk of the infant substantially between the armpits and the pelvis. Also, the securing member 1 must be designed to be sufficiently wide so that it extends substantially between the lateral chest and the lower abdomen of an older or larger infant. Therefore, the securing member of the present invention is at least 18cm to 20cm wide which we have found to be the optimum sizes for safe and comfortable positioning of infants as outlined above. Furthermore, the base member 3 is approximately 35cm to 50cm wide and fits flat across the mattress 9 so that there is no risk of the child getting its head or limbs caught under the edges of the base member.

Referring to Figure 4, the stitching 2 of Figures 1 and 2 is shown in more detail.

Referring to Figure 4, it will be seen that the stitching comprises at least one line and preferably two lines of stitching at two separate locations 20 and 22, extending substantially across the width of the securing member 1. A further line of stitching 24 is provided between the locations 20 and 22. Also, for added strength further lines of stitching 26 are provided parallel to the sides of the securing member 1. In the arrangement shown in Figure 4, it has been found in use that the general square of stitching comprising regions 20, 22 and 26 provides a flat base which prevents the securing member from clinging or having too great a swaddling effect. Thus with the arrangement shown in figure 4, the infant located in the securing member may roll through approximately 180° or further. That is, the infant is able to roll from a supine sleep position for example to a prone sleep position if the infant is physiologically capable of doing so and desires to do so, but the infant will be maintained in a central position on the mattress 9.

Referring to Figure 5, it will be seen that stitching 2 only comprises the single narrow line of stitching 24 to hold the securing member 1 onto the base member 3. It has been found that the narrow line of stitching 24 in use creates a greater swaddling effect when the securing member 1 is fastened about an infant. This substantially prevents the infant from rotating through 180°, but is usually sufficient to allow an infant to roll from a supine sleep position for example into a position in which the infant is sleeping on its side. In use, the wrap is preferably provided as

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shown in Figure 4, but the additional stitching 20, 22 and 26 (Figure 4) can be unpicked to leave the single line 24 if desired. It is important that the stitching 24 or 20 and 22 in Figures 4 and 5 extends substantially across the width of the securing member 1 so that a child cannot rotate in a plane of movement parallel to the bed base or mattress 9 and thus tighten the securing member 1 about itself to cause an area of localised pressure. It will be seen that any fastening between the securing member 1 and the base member 3 would have the effect described above with reference to figure 5 provided that the fastening between the members was provided substantially across the width of the securing member, or at least at the edges of the securing member and was narrow relative to the width of the securing member.

From the foregoing it can be seen that at least in the preferred form of the invention there is provided an infant sleep wrap which will substantially maintain a desired position or range of positions of the infant at least during sleep in security and safety with freedom of movement and without unnecessarily restraining the child. It has the potential to be of use in promoting safe sleeping positions in young babies and restful sleep in older children. Thus the position of the child is controlled but is not restrained in a way which would place unobserved babies and children at risk and prevents unnecessary injuries as a result of children falling from their beds, bunks or cots.

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CLAIMS:

1. An infant sleep wrap for maintaining the position of an infant in a bed or cot, comprising:
 - 5 a base member,
attachment means for attaching said base member to a mattress or a base of said bed or cot,
a securing member affixed to said base member, said securing member being sufficiently long to encircle an infant's chest and/or abdomen and being sufficiently
10 wide to at least extend substantially between the lateral chest and the abdomen of an infant,
and fastening means for fastening said securing member about the child.
2. An infant sleep wrap as claimed in claim 1 wherein said securing member
15 is sufficiently wide to extend the length of that part of an infant's trunk between the armpits and the lower abdomen or pelvis.
3. An infant sleep wrap as claimed in claim 1 or claim 2 wherein said securing member is fixed to said base member substantially across the width of said securing
20 member in at least two different locations on the securing member.
4. An infant sleep wrap as claimed in any one of the preceding claims wherein said wrap when said base member is attached to said mattress or base and said fastening means are fastened about an infant in a supine position, substantially
25 prevents the infant from manoeuvring itself out of said wrap or into a prone position, at least during sleep.
5. An infant sleep wrap as claimed in claim 1 or claim 2 wherein said securing member is fixed to said base member by stitching which extends substantially across
30 the width of said securing member in a single location, said location being narrow relative to the width of said securing member.

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6. An infant sleep wrap as claimed in claim 5 wherein said wrap when said base member is attached to said mattress or base and said fastening means are fastened about an infant substantially prevents the infant from manoeuvring itself out of said wrap, at least during sleep.

5

7. An infant sleep wrap as claimed in any one of the preceding claims wherein said fastening means are adjustable.

8. An infant sleep wrap as claimed in any one of the preceding claims wherein
10 said attachment means are adjustable.

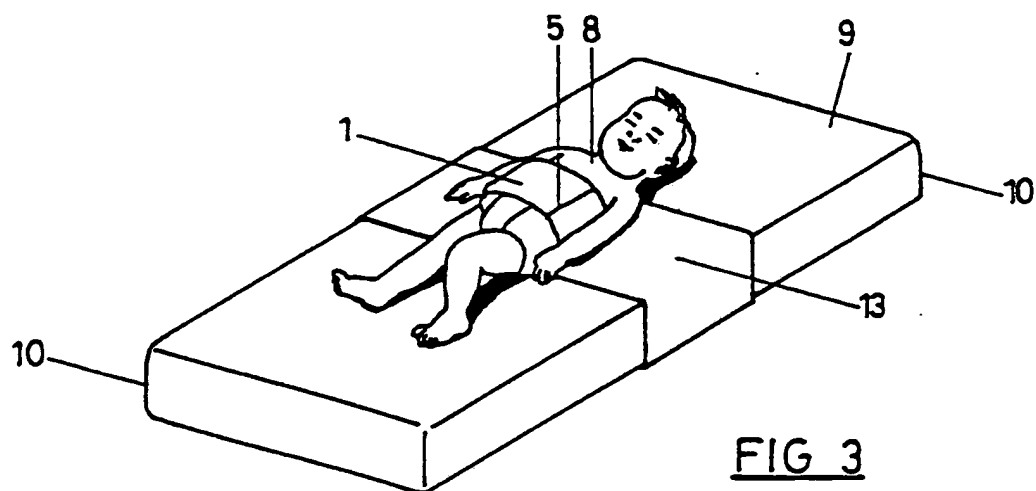
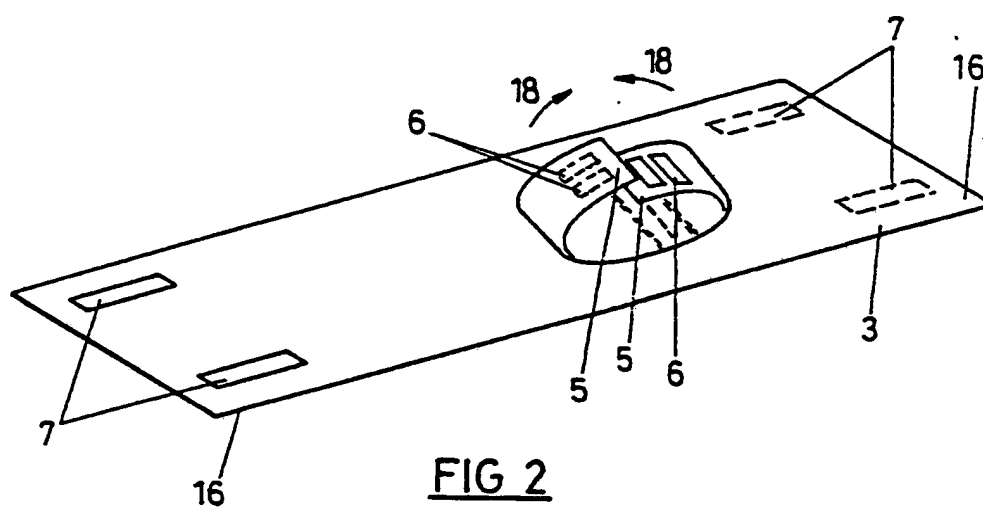
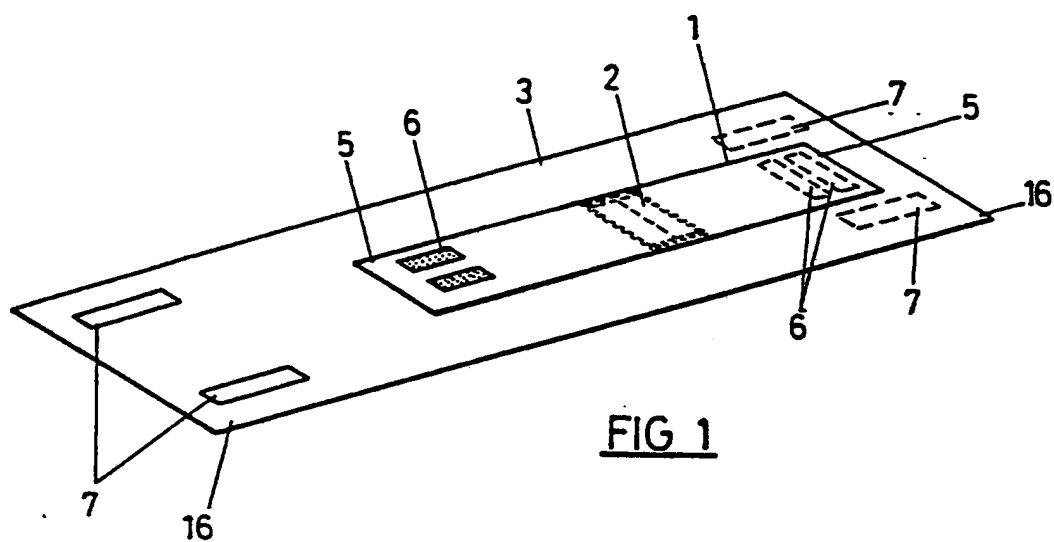
9. An infant sleep wrap as claimed in any one of the preceding claims wherein said fastening means comprise engageable pads or strips, at least one said pad or strip being located on each end of said securing member, the pad or strip on one end
15 of said securing member comprising a fibrous material, and the pad or strip of material on the other end of said securing member comprising a plurality of flexible resilient hooks, said hooks being engageable with said fibrous material.

10. An infant sleep wrap as claimed in any one of the preceding claims wherein
20 said attachment means comprise engageable pads or strips, at least one said pad or strip being located on each end of said base member, the pad or strip on one end of said base member comprising a fibrous material, and the pad or strip on the other end of said base member comprising a plurality of flexible resilient hooks, said hooks being engageable with said pad fibrous material.

25

11. An infant sleep wrap for maintaining the position, and/or movement of an infant in a bed or cot substantially as herein described with reference to, and as illustrated by, the accompanying drawings.

1/2



2/2

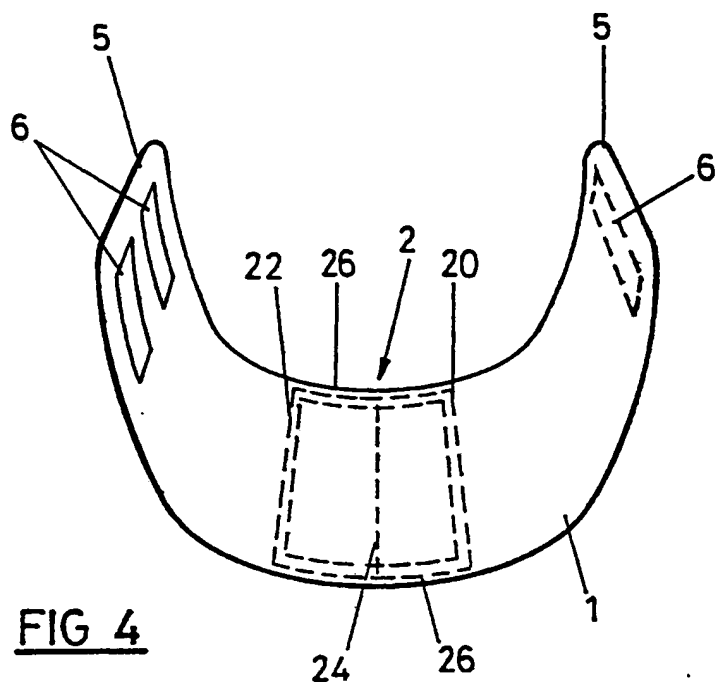


FIG 4

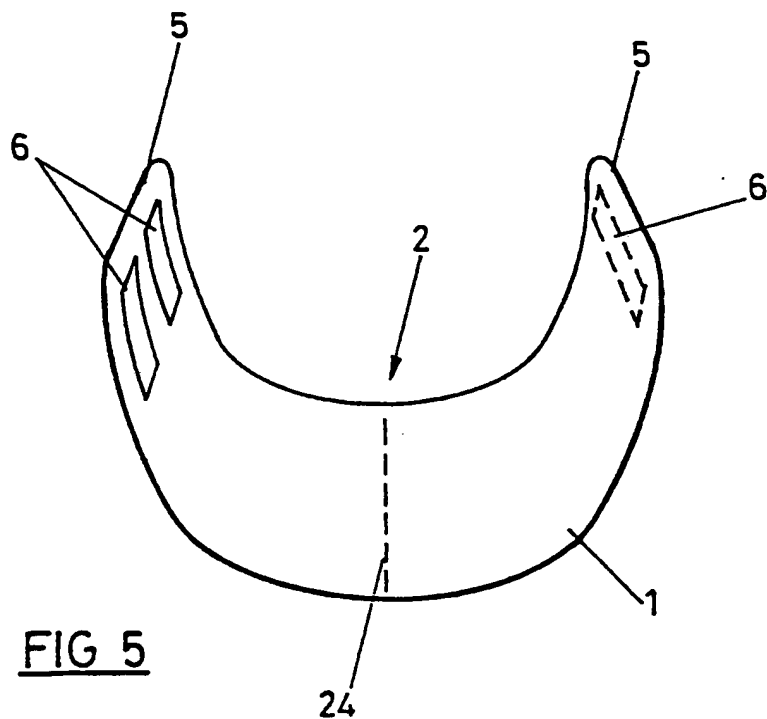
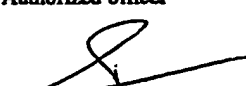


FIG 5

INTERNATIONAL SEARCH REPORT

International application No.

PCT/NZ93/00015

A. CLASSIFICATION OF SUBJECT MATTER Int. Cl. ⁵ A47D 15/00, 15/02, A47G 9/04 According to International Patent Classification (IPC) or to both national classification and IPC				
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC A47D 15/00, 15/02, A47G 9/04 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched AU : IPC as above Electronic data base consulted during the international search (name of data base, and where practicable, search terms used)				
C. DOCUMENTS CONSIDERED TO BE RELEVANT				
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to Claim No.		
X	WO,A, 85/01197 (TRITON EMPRISE TRADING COMPANY LIMITED and EVES) 28 March 1985 (28.03.85) Figures 1-4 with associated text	1-10		
Y	US,A, 2456898 (STRANDHAGEN) 21 December 1948 (21.12.48) entire document	1-10		
X	US,A, 2289726 (PRESPARE) 14 July 1942 (14.07.42) entire document	1-10		
(continued)				
<div style="display: flex; justify-content: space-between;"> <input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex. </div>				
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> * Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed </td> <td style="width: 50%; vertical-align: top;"> "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family </td> </tr> </table>			* Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family
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Date of the actual completion of the international search 11 June 1993 (11.06.93)		Date of mailing of the international search report 21 JUNE 1993 (21.06.93)		
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200 WODEN ACT 2606 AUSTRALIA Facsimile No. 06 2853929		Authorized officer  P. WARD Telephone No. (06) 2832129		

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate of the relevant passages	Relevant to Claim No.
Y	US,A, 2252357 (SHAW) 12 August 1941 (12.08.41) Figure 1 with associated text	1-10
X	DE,A, 682773 (MAURER) 21 October 1939 (21.10.39) entire document	1-10
X	US,A, 1923809 (BATES) 22 August 1933 (22.08.33) entire document	1-10
X	US,A, 1904480 (LEFFERT) 18 April 1933 (18.04.33) entire document	1-10
X	CH,A, 95967 (MERMINOD) 1 September 1922 (01.09.22) entire document	1-10
Y	US,A, 4861109 (LEACH) 29 August 1989 (29.08.89) entire document	1-10
X	US,A, 2034954 (MURPHY) 24 March 1936 (24.03.36) entire document	1-10

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/NZ93/00015

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member					
WO	8501197	AU	33108/84	EP	157785	US	4712258
US	4861109	CA	1312848	EP	355950	JP	2055056
		US	4834459				
END OF ANNEX							